THE VETERINARY RECORD

A Weekly Journal for the Profession.

EDITED BY WILLIAM HUNTING, F.R.C.V.S.

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ARMY VETERINARY RANK.

For some time past the medical officers of the Army have carried on an agitation for an alteration of their position. They, like the veterinary officers, were, what is called, Departmental in contra-distinction to Regimental. Their rank was *relative*, and, according to their length of service, etc., they were described as "ranking as Captain, Major, or Colonel," as the case might be. This relative rank carried with it an implied distinction between the departmental and combatant officers which was prejudicial to the interests of the Service. During the last session of Parliament the medical officers succeeded in obtaining from the War Office a recognition of their claim to be considered officers of the Army in the fullest sense, and a Royal Warrant was issued giving them substantive rank.

In reply to a question asked in Parliament the Minister of War stated that similar privileges would be given to officers of the veterinary department, and this week *The Gazette* announces the issue of a Royal Warrant fulfilling that promise. Veterinary surgeons in the Army now no longer hold relative rank—they are officers in name, and in fact. They no longer *rank as* captain or colonel, but *are* captains and colonels. On another page we print so much of the Warrant as is necessary to define the new position, and we congratulate the department upon the decided step upwards they have attained. We also congratulate the profession upon the step, because the change must re-act favourably upon us all—it is a distinct social advance for the veterinarian. To those of our members who form a part of the Army this Warrant marks the recognition by the Government of our equality with the surgeon; and all invidious comparison between the "combatant officer" and the medical or veterinary services now ceases.

Nothing in the world is attained without effort, and we must compliment Colonel Lambert upon the quiet, unobtrusive manner in which he has obtained for himself and his colleagues the privileges which the medical service only reached after severe and somewhat noisy agitation.

CONCERNING DISSECTION.

In our report of the last meeting of the Central V. M. S. will be found some remarks on the subject of a prize offered by that Society to Veterinary Students, for the best dissection of a fore leg. The prize was only £5 but it was expected that the honour of winning and not the money alone would have induced some student from the four schools to compete. It turns out that there were no competitors and so the Society save their money. It is an interesting question to determine—why the prize failed to draw? One member suggested that dissection was not now an essential study at Veterinary schools; but a professor of anatomy who was present characterised this is an unwarrantable assumption, and explained that the students probably were not aware of the conditions of the prize. It seems certain that some did not know, that others were too busy with other work, and it may be inferred that those who did know considered the game not worth the candle. The Society seem inclined to repeat their offer, and it would be well to ascertain if this prize meets with the approbation of the Schools. If it does not we can quite understand that students will not take any interest in it. Perhaps the amount is too small, perhaps the limit to a special part is not approved. If the Society in their action merely wish to encourage dissection, it might be well to leave the subject entirely to the discretion of the student and accept whatever is sent. There seems no sufficient reason to limit the preparation to a fore or hind leg—the best dissection is all that is wanted. Surely there are plenty of subjects sufficiently well done every year in the different dissecting rooms to earn this prize. The Society return the preparation, so no loss can be sustained by any student who sends his work for competition, and the prize would always be something to be proud of. We hope some young fellow this year will win the Central Society's prize.

THE NEW CHARTER.

Another step forward has been made in this matter. The Solicitor to the Royal College of Veterinary Surgeons has drafted the preliminary petition for a Supplemental Charter, and the document will be submitted to the Council at their next meeting. The petition sets forth the conditions which now obtain under existing charters, and states what alterations are desired. It is most important that the reasons for the proposed changes should be lucidly and forcibly expressed. This document is all that the Privy Council have before them to guide their decision, and if our reasons are not clearly stated it is possible we may meet with a refusal. When the petition comes before us we must look carefully to this point, and we trust the Council will not hesitate to amend any paragraphs which seem weak or defective.

CASES AND ARTICLES.

SCROTAL HERNIA.

By R. Rutherford, F.R.C.V.S.

I have not for a long time back derived so much pleasure from the reading of "Clinical Notes" as I have from those which have appeared in your two recent issues on "Strangulated Scrotal Hernia," and for which we have to thank Mr. Meredith of the A.V.D.

This lesion, which is of very rare occurrence in this country (I have never seen one), is exceedingly common in India, where a large percentage of the horses are kept entire, and where there are special and climatic causes favouring its occurrence.

Necessarily fatal unless relieved by surgical operation, which to be successful must be carried out immediately, or very nearly so, after its occurrence, it is one which especially taxes the coolness and prompt diagnostic and operative skill of the veterinarian.

Mr. Meredith's cases bring to my recollection a large number of similar ones, and also remind me that there is a lesion of the spermatic cord which in symptoms and results so closely resembles those of strangulated scrotal hernia, and which, so far as I know, has not been recorded, that I have much pleasure in herewith sending you descriptions of the first two cases I saw, copied nearly *verbatim* from my then carefully-kept case book. If you think them sufficiently interesting to publish I shall be very pleased.

Case I.—Calcutta, Sept. 3, 1864; 5.30 p.m.: Bay Arab horse, seven years old, brought to hospital by his owner, Esau Bin Curtis, an Arab dealer. This horse was successfully operated upon eight months previously for "filaria oculis," since when and up till four days ago he has been to all appearance in good health. Esau says he has had fever for four days, but considered him much better this morning and up till noon, when he evinced symptoms of colic, which abated towards 3 p.m. At time of admission the horse was still in pain, skin hot; sweating profusely over neck and flanks; breathing short and quick; pulse at jaw imperceptible at times, at arm 90 to 100, and weak; visible mucous membranes slightly injected; legs, ears and muzzle cold; had passed dung and urine during day as usual; walked with a straddling, dragging motion of the hind extremities, with slight abduction in the forward movement of the near hind leg. Viewed from behind, the near testicle filled up nearly all the space between the thighs; scrotum thickened and immovable on itself; the swelling was greatest at the inferior part of the scrotum and testicle, which when pressed gently by the hand caused the animal to evince pain at once. The parts were not elevated in temperature, on the contrary. The swelling extended up the cord towards the abdominal ring; but instead of being greater at this part, as in scrotal hernia, it was less. The position of the swelling in this case was reversed from what it is in hernia, and there was no continuous colicky symptoms as in hernia. Left to himself the horse would turn his head round to the near side, but he never attempted to lie down nor, in fact, to move.

Diagnosis.—There was some difficulty about this. I had seen and treated many cases of orchitis, inflammatory hydrocele, &c.; but the diagnostic symptoms had been more evident, pointing to the exact position of affairs at once—the swelling was always extensive, generally involving both sides of the scrotal sac, pitting on pressure, and elevated in temperature. In scrotal hernia there would have been the same constitutional disturbance, but also colic of a marked character: and if with the hand the scrotum is grasped close up, nothing but a roundish tumour is felt—the doubling of intestine which has descended thus far towards or into the scrotum. Whereas, in the present case, the swelling decreased towards the abdominal ring, and the spermatic cord could be felt, swollen, thickened, increasing towards the testis, which latter was also swollen, hard, and painful—a symptom not common to hernia.

My senior and colleague (the late Mr. John Sherriff) made the case out to be one of inflammmation of the testis, involving the cord, and gave an unfavourable opinion as to the result. Under his instruction the only treatment adopted was the administration of stimulants, with local fomentations.

At 9 p.m. he was sinking, pulseless; extremities, body and testis cold, and wet with cold sweat. At 1 a.m., Sept. 4, he died.

Sept. 4th, 5.30 a.m. I made an examination of the parts. The scrotum, especially of the affected side, was adherent throughout all its coverings; between the dartos and tunica vaginalis a thick layer of yellow coagulated exudate existed; the coverings were thickened, and the substance of the testicle of softened consistence, of a deep brown liver colour, veins highly engorged; spermatic cord gorged with blood, thickened, and strangulated up to the exit of the cord through the abdominal ring. There the strangulation ceased, and beyond the ring towards the origin of the cord all was quite normal, with the exception of a little congestion just at the ring. I look upon this as a case of severe inflammation of the testicle, which on the fourth day of illness involved the cord and proceeded to strangulation and death of the parts. At the time of admission death was setting in of the testis and strangulated spermatic cord; nevertheless I am of opinion that this horse would have had a fair chance of recovery had he been at once thrown and the strangulation relieved by division of the cord.

Much valuable time was also lost from the horse receiving no proper treatment during the four days he was observed ill. This should have consisted of purgative medicine, followed up with calomel and hemp, leeching and the application of iced or warm water, whichever gave most relief, with suspensory bandage, to support the testicle and prevent dragging on the cord.

Case II.—Illustrates the great advantage of early operating in all cases of suspected or existing

strangulation, either of the bowel or cord; also how easy it is to make an error in diagnosis occasionally, although, happily in this case, the first part of the operation which led to discovery of the error was necessary, no matter which strangulation was actualy present.

Jan. 15, 1866; 3 p.m.: Was called by Mr Hammond, trainer, to "Shah in Shah," a chesnut Arab horse, in training and promising well for second meeting of the Calcutta racing season. He was quite well, and did his work in the morning, nothing unusual occurring; fed when he came in and again at tiffin time, about 1 p.m. I found him sweating profusely, uneasily impatient, with inclination to lie down; in standing and in moving there was abduction of the off hind leg, and he constantly turned his head, and bored his nose into the off flank. There was retraction of the off testicle, and a firm resistant tumour extending from the lower part of the scrotum upwards to the abdominal ring, with pain on pressure.

I diagnosed the case as one of strangulated scrotal hernia, and, the horse being very valuable and the case one admitting of no time to lose, I sought a consultation with Mr. Sheriff and with Mr. Greenhill, both of whom, after examination, concurred in its being a case of hernia.

The horse was bled and cast as for castration, and as it was thought the presumed strangulated intestine could be returned by the taxis, both Mr. Sherriff, Mr. Greenhill, and myself, endeavoured to do so; but of course, under the actual circumstances, without result. It was decided to operate by division of the ring, and that I should perform the operation. On laying open the scrotal sac we were rather surprised, agreeably so, to find no protrusion of intestine —no hernia, in fact; but an immensely enlarged and partially stangulated spermatic cord. This we relieved by ligature of the artery and subsequent division of the cord—by the knife. The horse made a good and speedy recovery, although of course the pen had to be drawn through his name for his engagements.

COMPENSATION FOR FARCY.

If glanders and farcy are due to an identical poison and only differ from each other in the localisation of the symptoms, it is evident that so long as one form exists we must also have the other. To get rid of glanders we must stamp out farcy. The existing law requires that every case of glanders and farcy shall be at once reported to the local authorities and kept separate from other horses. The next regulations assume a difference in the two forms of disease—for glanders *compulsory slaughter* is enacted, for farcy isolation and treatment is permitted. Why is any difference acknowledged? Why is slaughter made compulsory in one case and not the other? Glanders is a fatal, incurable, and contagious disease. If an affected animal were not killed it would probably infect other horses, it would not recover and would in all circumstances be a loss to the owner. The law very properly directs that such a dangerous and useless animal shall be destroyed. Farcy on the other hand is not always fatal. Even if it is not curable, it may often be temporarily checked so that the infected horse does some months, or it may be years of work. Possibly two per cent. of cases of farcy are curable, twenty per cent. capable of temporary amelioration, and the rest are incurable. Unfortunately the "temporary amelioration" means only that the external symptoms pass off whilst the poison settles in the lungs and slowly developes there, until some disturbance re-kindles its activity, and disease is again apparent—usually in the form of glanders. In other words the apparently cured farcy is only reduced from an active to a latent form, and the animal for a short period presents no sign of the disease which in time will again develope into a visible contagious malady. During this "cured" stage or more correctly this "patched up" stage, the horse may be sold—and very few owners refrain from selling these dangerous brutes.

In this way glanders is carried from stable to stable, and the law is useless as a preventive agent. No man knows when he may buy such a horse, and it may be put in his stable alongside other horses with no suspicion of its latent infection. When the first evidence of its diseased state is manifested by a slight nasal discharge it is looked upon as a common cold, and usually some days elapse before the real nature of the case is detected. Then the horse is removed from amongst the others, but only after one or two of them have become infected, though they may show no signs of their state for months; in this way arises nearly every outbreak of glanders. The existing law can never alter this state of things, for the government regulations are not preventive measures, they are only forms of registration which note those cases that are slaughtered or isolated.

Glanders is inevitable so long as farcy prevails, hence if the extermination of glanders be worth attempting farcy must be treated as an equally dangerous disease, and both must be ruthlessly slaughtered as soon as discovered. But if every slight case of farcy were subject to compulsory slaughter, owners would not report, and a small army of detectives would be needful to find the disease. Nor could we blame owners for hiding such cases. It is clearly unfair to force a man to kill a £40 horse that m y possibly, with care and time, recover his health or at worst may "patch up" and do some months service. To kill the glandered horse is no hardship to the owner as the animal is dangerous and useless. To kill the farcied horse is a hardship, because it is done to protect the public at the expence of the owner. If we compel a man to suffer loss as a protection to other men the State should compensate him. If it can be demonstrated that the existence of glanders is a national evil but that it can be extinguished by destroying horses affected with farcy. we have a perfectly good claim for national compensation to the individual whose horse has to be killed. The only reason the horse-owner now treats and "patches

up" his cases of farcy is to sell or work them. To magnanimously kill them and play the part of a public benefactor is very expensive, and the poor man seldom rises to that height—he not unfairly argues; "If I kill my horse I bear all the loss; other men don't kill, they sell; why should I lose this one and perhaps buy another "patched up" horse to take its place."

If a small compensation were given for cases of farcy when reported early, every case would be reported, and the two diseases would, I believe, be stamped out entirely in three years. Compensation might be half the value of the horse and the maximum value be limited o £40. The majority of infected horses might be valued at £20, and the compensation of £10 would at most amount to £10,000 a year. The utmost cost to government would amount to, say five years compensation, £50,000. Unless this be done we shall continue our annual loss of £20,000 and if we have a war our Army will increase this loss indefinitely, *for it cannot escape infection* when it is obliged to purchase largely and in a hurry.

W. H.

VETERINARY SOCIETIES.

CENTRAL VETERINARY MEDICAL SOCIETY.

Meeting at the First Avenue Hotel, on Thursday evening the 1st October. Present—Messrs. Butters, Barrett, J. A. W. Dollar, Gibbings, A. E. Gostling, Kettle, Mahon, Moore, Mulvey, McOnie, Prudames, Professor Penberthy, Messrs, Roots, Rowe, Rogerson, Rogers, Samson, Prof. Shave, Messrs. Villar and Woodger. The President in the chair. Visitors present—W. Rattee and Prof. Macqueen.

The Secretary read the minutes of the last meeting which were read and signed as correct.

A post card was read from Prof. Walley expressing his inability to attend the meeting.

The Secretary next read a letter from the Secretary of the Congress on Hygiene acknowledging receipt of Society's letter naming its delegates and intention to contribute 5 guineas towards the expenses. In regard to J. Hepton, who applied to the society for assistance, a letter was read from the Yorkshire Society, stating that they had never heard of that gentleman but they now saw his name was on the Register.

Mr. Rowe asked the Secretary if he was aware whether he had applied to other societies. Mr. Rogers said he was not. He had ascertained that his name was on the Register. He thought the man should be best known by his nearest society. It was rather far for them to go to give assistance if a society in his own immediate neighbourhood took no notice of him.

It was decided to proceed with the next business. A letter was read from the Royal College of Veterinary Surgeons acknowledging and thanking the society for their handsome donation of £50 for an exhibition or prize fund.

New Fellows.

The following gentlemen were unanimously elected Fellows of the Society:—

I. Matthews, Royal Horse Guards, Blue; W. W. Wright, St. Johns; A. Wheatley, Reading; T. C. Garry, Wandsworth; S. E. Holmans, Lee.

Annual Report.

The Secretary then read his annual report; from this it appeared that 16 new Fellows had been elected, and 4 had resigned. The present number was 90. There had been four council and 10 general meetings, and the average attendance at the latter was 25. Eight papers and addresses were given, and many interesting and instructive discussions had taken place.

£50 had been given to the R. C. V. S. towards a prize fund; 20 Guineas to the Steel Memorial Fund; and £5 had been offered as a prize for the best dissected specimen sent in by students of any Veterinary School. The latter had failed to bring forward a competitor.

The receipts for the year were £74 15s. 11d. The expenditure of the Society had amounted to £85 16s. 1d. and the amount on deposit and in the hands of the Hon. Treasurer, was £238 12s. 2d. Mr. Woodger, pointed out that £50 had not yet been handed to the Royal College.

Mr. Mulvey said he would like to know why there were no competitors for the £5 prize offered. The Secretary said he had received a letter from Prof. Walley, stating that his students had no time. The Secretary of the Camden Town College wrote, saying the Society's notice came too late, but he appeared to overlook the first notice of the prize which was given some months before. Then besides it was publicly advertised in the Journals. Mr. Mulvey said he supposed they must assume then that the students had no time to give to anatomical dissection.

Prof. Shave said that assumption would be unwarranted. He thought it would be best if the society sent a notice to be posted up in the colleges. It was quite possible that the students overlooked the notice in the Journals. He thought the society should give the students one more chance; if they did not take any notice of it another year then, he thought, they would be showing great apathy. He should do the best he could to induce them to do so.

Mr. Mulvey reminded Prof. Shave that the notice was sent to the Secretary of the Camden Town College a very long time ago.

Prof. Shave said he could not say anything as to that. He should see now that the notice was posted in the dissecting room.

Mr. Villar said he had posters printed and sent round to the various institutions.

Mr. Barrett said perhaps Prof. Shave would suggest a better means to adopt. Perhaps the prize could be given to the one who passed the best examination.

Mr. Rowe advised the society to continue the original plan a little longer.

Mr. Prudames asked whether any conditions were given with the offer.

The Secretary said the specimens were simply to be sent in to be judged by a Committee, and the competitors would receive their specimens back.

The Chairman said he was inclined to agree with Mr. Rowe, that the original plan should be adhered to. Still they would be very glad to hear any proposal from Prof. Shave.

Professor Shave said they had plenty of examinations and he should like to see the students have energy enough to go in for the dissection. If he could suggest anything it was perhaps that a description should be given by the student of the part sent in.

The Chairman said if that were carried out he should be inclined to give the prize to the one who gave the best description.

Mr. Mulvey said they had offered the prize without

conditions, and there had been no single response. Any conditions now, he thought, would render a response still more unlikely. He then proposed that it be a recommendation to the Council to offer the prize for another year on the same conditions. This was seconded by Mr. ROWE and carried unanimously.

The SECRETARY then read the balance sheet, which showed a balance in hand of £38 12s. 2d.

Mr. MULVEY said there could be no discussion on such a good balance sheet.

Mr. ROWE said they had worked well and achieved results that they must all be satisfied with.

Mr. MULVEY moved that the report and balance sheet be received and adopted. Mr. MOORE seconded the motion which was carried,

ELECTION OF OFFICERS.

Mr. ROWE said as one of the oldest members he took the liberty of proposing one who had made himself familiar to them all by his constant attendance and the work he had done for the society. He alluded to Mr. Roots, and although he was not the oldest member still he thought they would be paying a graceful compliment to him by electing him their President for the coming year. He did not wish to add any fulsome praise. He did not know whether there was any other name to be suggested, but he hoped that they would be all in favour of one only.

Mr. BARRETT said he had pleasure in seconding Mr. Rowe's proposal. He did so with considerable satisfaction. Mr. Roots had devoted much time to the interests of this society. He had been present at most of their meetings, and was worthy of their support. He had special pleasure in seconding this proposition inasmuch as Mr. Roots was a neighbour of his. He was quite sure Mr. Roots would carry out the duties of the honourable post impartially and with courtesy. There was no question as to his ability or fitness and he hoped they would elect him unanimously.

The CHAIRMAN then put the proposition to the meeting and it was carried unanimously.

Messrs. ROWE and GOSTLING were appointed Scrutineers on the proposition of Mr. VILLAR, seconded by Mr. MULVEY.

Four Vice-presidents were then balloted for. Seven names were proposed, viz: Messrs. Samson, Wragg, Mulvey, Raymond, Barrett, Villar and Prof. Shave.

The result was as follows :—

Mr. Raymond 9, Mr. Wragg 7, Messrs. Mulvey, Villar, and Shave 6 each. The last three names were submitted to a second ballot, when Mr. Villar received 11, Mr. Mulvey 9.

The four elected were therefore Messrs. Raymond, Wragg, Villar and Mulvey.

For twelve members of the Council the following were nominated :—

Messrs. Kettle, Penberthy, Dollar, Moore, Prudames, Shave, Barrett, Gibbings, Rowe, Samson, Rogerson, Sheather, Hunting, McOnie, Gostling, Axe and Pritchard.

The elected were—Mr. Hunting 13, Mr. Samson 13, Mr. Rogerson 10, Mr. Gostling 10, Mr. Dollar 9, Mr. Moore 9, Mr. Rowe 9, Prof. Penberthy 8, Mr. Gibbings 8, Prof. Pritchard 7, Prof. Shave 7, Mr. Barrett 7. Of the others, one secured 6 and three 5 each.

Mr. ROWE then proposed Mr. Woodger as Hon. Treasurer, which was seconded by Mr. Rogerson and carried unanimously.

Mr. MULVEY said their present Secretary Mr. Rogers had done so well in the little time he had been in office that they could not do better than re-appoint him.

Mr. ROWE in seconding the proposition said he hoped Mr. Rogers would have as much pleasure in office as he (the speaker) had in his day.

The proposition was carried unanimously.

Mr. ROGERSON then proposed as two auditors Messrs. Butters, and Gostling, which was seconded by Prof. Penberthy and carried unanimously.

Mr. MULVEY proposed a vote of thanks to the Chairman, which was seconded by Mr. ROOTS and carried unanimously. Mr. SAMPSON replied in a few well chosen sentences.

Mr. VILLAR proposed and Prof. PENBERTHY seconded a vote of thanks to the Hon. Treasurer, Mr. J. WOODGER, which was unanimously carried. Mr. WOODGER acknowledged the thanks of the Society briefly.

Mr. SIDNEY VILLAR gave notice of motion "that the place of meeting of the Society be changed." This ended the proceedings.

NATIONAL VETERINARY ASSOCIATION,

Meeting at Doncaster, July 1891, Prof. Axe in the chair.

PAPER ON "BLACK QUARTER, AND ITS SO-CALLED PREVENTIVES."

BY PROFESSOR PENBERTHY.

Though characteristically limited to certain areas, *i.e.* typically enzöötic, there is perhaps no disease of farm stock so widely spread, so destructive, or so persistently associated with certain fields, farms, or districts. When we realize that on very many estates the losses attributed to its ravages among young horned stock amount to from 7 per cent. to 12 per cent., its study must be of the deepest interest to us; but following the injunction of our Secretary, I will endeavour to occupy space and time due to a minor subject with fitting respect to brevity, and deal as concisely as possible with what I regard the more essential points.

The general distribution of the disease has lead to the adoption of many synonyms, and with few exceptions these are in some way significant of one or other of its more manifest characters rather than of its intimate nature. Thus it is vulgarly known as "Black Leg," "Black Quarter," "Quarter Ill or Evil," "Joint Murrain," "Fellon," &c., &c.; technically as "Symptomatic Anthrax," "Charbon Bactérien," &c. Here we may remark that the commoner names have done far less to obscure the nature of the disease and to mislead than the so-called scientific. It is now not rare to hear this disease and anthrax spoken of as if they were the same or in intimate relation. They are perfectly separate and distinct, and as far as we know in no way related. Black Quarter is undoubtedly a specific disease following entrance into the body of a micro-organism, which has little or no resemblance in appearance or action to Bacillus Anthracis. Though we do not propose to go minutely into the characteristics of the Morbific Microbe, it is perhaps necessary that we state some facts concerning it, apart from discussion as to whether it is bacterium, bacillus, or clostridium. As most commonly met with it is from ·005 mm. to ·010 mm. in length, and ·004 mm. to ·0013 mm. in breadth; in the serosity of a fresh tumour usually straight, and differentiated as by a spore at one end; in muscle a few days after death very irregular in shape, often dumb-bell shaped and even fusiform. Shortly after death it is found in large numbers in the characteristic lesion and in the bile, very few in the blood, none in the urine; after a while it becomes more generally distributed through the carcase. As compared with bacillus anthracis, it is shorter, thicker, rounded at the ends, mobile, capable of living and mani-

festing its vital phenomena in presence of putrefaction, and of retaining its vitality here for long periods. It is said to readily pass through the membranes from the mother to the fœtus, and in fatal cases is found in the latter. It possesses a remarkable power of forming gases in an albuminous medium. It can be cultivated only anærobically. Fowl broth mixed with glycerine and sulphate of iron, and the oxygen expelled by carbonic acid gas or hydrogen, affords a good cultivation medium.

Experimentally tested by injection of the virus, the differient species of animals manifest varions susceptibility. Guinea pigs, cattle from six months to four years old, and sheep are more readily affected. Young horses have a more feeble receptivity. The rabbit, though said by some observers to take the disease readily, I have found with ordinary methods to have little susceptibility, but if the part to be inoculated be previously bruised, or the virus inserted in an aseptic glass capsule, and this be broken in a few hours, typical Black Quarter ensues. Swine, dogs, cats, rats, poultry, and pigeons are immune. Cold-blooded animals in their natural state withstand large quantities, but if their temperature be considerably raised they fall ill and die. Calves below five months enjoy a remarkable immunity, and young guinea pigs are extremely easily affected.

The period of incubation in experimental cases is very short, ranging from 12 to 24 hours. Fatal effects usually follow injection of small quantities of active virus into certain parts, and death takes place commonly within 60 hours. The lesion produced by the virus is so well known as not to require description. The local effect is the disorganisation of the tissues about the seat of inoculation, breaking up of the blood, and formation of the gases in the tissues; depending on or associated with this is a rise of temperature and great constitutional disturbance.

The effect seems to depend largely on the susceptibility of the animal, the condition and amount of the virus, and the mode of entry. The susceptibility of species is evident, and, so far, inexplicable. That of the individual may be influenced by idiosyncrasy, age, and previous disease, and it is a general impression that certain states of developmental activities of the system predispose. The individual natural immunity to all specific disease is generally recognised. Age seems to have a considerable influence. We have before remarked that calves under five months old rarely become affected; but recent observations go to prove that weaned calves under this age die of the malady more commonly than unweaned calves of the same age. Spontaneous Black Quarter seems to affect cattle as regards age in an order approximately represented as follows:—

From	6 months	to	1	year	...	...	38
„	1 year	to	2	years	...	...	45
„	2 years	to	3	„	...	...	8
„	3 „		4	„	...	...	7
„	4 „		5	„	...	...	1
„	5 „		6	„	...	...	1
							100

i.e., of 100 fatal cases. The power of the virus may be affected in various ways. Fresh and moist it is much more easily attenuated than dried. Mixed with lactic or sarco-lactic acid the virulence is increased. Weakened virus becomes more powerful after passing through susceptible animals. Many chemical substances have a marked effect short of destroying the vitality.

The effect is materially dependent on the amount of virus introduced. Thus, in cattle, one is rarely able to induce the disease by pricking with a lancet which has been dipped in serosity from affected muscle; indeed a considerable number of organisms, or those specially potent, seem necessary to its production. The malady follows entrance of the virus into the connective tissues, blood-stream, respiratory and alimentary tracts. Small quantities of the connective tissue give fatal effect; larger quantities by the respiratory and alimentary channels; while very large quantities only injected into blood-stream are effective. Arloing, Cornevin, and Thomas quote a case of Black Quarter following the ingestion of the virus by the alimentary way. My own experiments on this point have failed except when some of the connective tissues have been forcibly injured, in which case disease has become localised in the seat of injury.

The amount and looseness of the connective tissue appear to have a marked effect in determining the action of the poison. Injection of considerable quantities into the tip of the tail induce a comparatively benign local lesion, the general disturbance and danger increasing in proportion with the nearness of the injected spot to the trunk.

According to the mode of entry, the disease may probably assume two forms, varying in one essential, namely that in one the more general disturbance precedes, and and in the other succeeds, the local. Thus, after entrance (of very large quantities) into the blood-stream, the rigors, heightened temperature, &c., precede any local lesion; whereas, when the disease depends on entry by the subcutaneous tissues, the signs of fever follow, or are concomitant with the lesion.

As the foregoing can only be useful to us as they may be made to bear on the prevention or cure of the malady, it is for us to consider the so-called "preventives." To the fact that immunity is often inherited or naturally acquired every-day practice clearly points, and that it may be artificially produced experiment leaves no doubt. On what this immunity may depend, I fear it would not be profitable for us to endeavour to show here. However, direct observation by Dr. Ruffer proves that leucocytes, lymphocytes, or phagocytes possess a remarkably destructive influence over these disease-producing organisms, and that in the struggle between the two, each secretes a substance—that of the leucocytes, in large quantities, destroying the bacilli; and that given out by the bacilli, breaking down the red corpuscles, large numbers of which are afterwards found in the spleen. If the virus be in small quantity, or the leucocytes specially active, the result is destruction of the bacilli, recovery, and immunity from the disease, as proved by test inoculation after with virulent matter. This is supported by what may be observed in practice, for if an animal be inoculated, naturally or artificially, with the virus in considerable amount (though not sufficient to cause death), there is, at the seat of inoculation, a larger or smaller collection of leucocytes, in the form of pus. I have tested, by inoculation of large quantities of virus, cattle which have recovered from Black Quarter, by formation of abscess at the lesion, and found them proof against the disease. Poisons which have the power of lessening the activity of leucocytes given to animals increase and accelerate the action of the bacilli, and hasten the fatalities. The observations of Hankin tend to prove that cell globulin possesses bacteria-killing material, and that serum and phagocytes probably contain the same or allied substance. This defensive substance is most noticeable in febrile blood, especially associated with inflammation induced by pathogenic organisms. The injection of some ferments, as trypsin, increases this material in the system. Undoubtedly in the immune animal there exists a something having a bactericidal or deterrent action, not injurious to the system in general; and though whether this be albumose, ptomaine, or what else, it matters little to us now, practically it can be only to the production of this material that we may look for a plan of protective inoculation. That this power normally exists in the blood-stream to a greater extent than elsewhere is highly probable, as

shown by the following experience on the lines laid down in Arloing's work. On the 12th November, 1886, we injected into the lumen of the jugular vein of each of four twelve-month old calves eight or ten drops of juice squeezed from affected muscle of a young bullock, just dead of naturally-contracted Black Quarter. These inoculated calves were then placed with four others, which we call "control," on to a pasture notorious for fatalities from the disease. No disturbance except a rise of about one degree of temperature was noticeable. On the 24th one of the uninoculated calves died of typical Quarter Ill. Some muscle juice was obtained from the most affected part of this animal, and a drachm injected into the intramuscular and subcutaneous tissue of the remaining seven, with the result that nothing beyond a rise of a degree of temperature was observable in the four previously intravenously inoculated, whereas two of the three control animals contracted Quarter Ill, and died, one on the 26th and one on the 27th November. In the other the temperature ran up to 104·6, the seat of inoculation became much swollen, and a very large abscess formed, and by the 8th of December constitutional disturbance disappeared, and the animal, with the exception of lameness of the affected limb, seemed well. It is thus seen that the four protected animals survived the crucial test unaffected in any way; that, of the unprotected, one contracted fatal Black Quarter naturally, three artificially, two of which succumbed, and one survived with the formation of a large abscess. Following this, we inoculated intravenously twenty-four young cattle which grazed on the most daagerous pastures during their lives free from Black Quarter. But for the practical value of this method it must be stated that, while undeniably affording protection, the operation is fraught with some danger, as shown by the next experience.

In June, 1888, at the special request of the owner, we intravenously inoculated fifty-three young cattle, without skilled assistance, with the unfortunate result of death of three from the disease within three days of operation. It is, however interesting to note that, of the survivors, none afterwards contracted the disease. Though every care was taken, from the seat of the lesion, and our previous experience of the effect of considerable quantities in the blood-stream, we are forced to the inference that some of the virus gained the connective tissues surrounding the vein. Arloing, Cornevin, and Thomas record experiments with fresh and dried virus injected into the trachea, and with small quantities of fresh virus inserted into the subcutaneous tissues, and state that these means are protective; but inasmuch as the virulence of muscle juice is liable to vary very materially, there is, to my mind, too great a danger connected with its use. These observers also state that if the virus is submitted to the action of some chemical agents it becomes attenuated, and, injected into the system, confers immunity. They also assert that if the affected muscles are chopped rather finely, squeezed through a rather coarse strainer, and the expressed juice allowed to dry at 35 C., it retains its activity little impaired. This material then submitted to higher temperatures, the one part to 100 C. and the other to 85 C., in both cases retains some but decreased vitality. This is reduced to powder, and used as an inoculating matter to afford protection. For the operation, a little of the powder submitted to 100 C. is mixed with water and injected underneath the skin of the tail; in about twelue days this is followed by a similar injection of the powder submitted to 85 C. There is little or no danger in the use of this powder, and the plan is very largely adopted in France and Switzerland, where Black Quarter is very rife. A large number of statistics appear to prove its beneficial action. Thus, in 1887, the Amalgamated Agricultural Societies at the base of Mount Jura vaccinated in this way 1,703 animals, and turned them on to pastures with 18,720 unvaccinated. At the end of the summer it was found that deaths from Black Quarter among the non-vacsinated were 1·30 per cent., and amongst vaccinated 1·75 per thousand. In 1884 M. Strehel inoculated by this method 14,444 beasts in the Canton of Friborg. In five years the disease killed only 1 out of every 555, while of 22,300 cattle not so inoculated, but living with the above, 1 out of every 43 succumbed to Black Quarter. From this it would appear that a remarkable success follows this means. It is very simple of application. The dried virus, reduced to a powder, is supplied in packets. It will, however, be gathered from the foregoing that protection is not absolute. We were anxious to put the process to the test, and having been informed by M. Arloing that M. Fromage, of Paris, was his accredited agent, obtained through him a supply of the so-called "vaccin." At first we used this on several animals on a farm in Sussex, and some goinea-pigs; but the application of the crucial test to "vaccinated" and control animals gave no decided results; but in January, 1886, most carefully following instructions sent us, we "vaccinated" a steer and heifer, each ten months' old, and a guinea-pig. Early in February a few drops of affected muscle juice were injected in the subcutaneous tissues of the cattle, and half a drop into the guinea-pig, with the result that the guinea pig died of typical Black Quarter in 24½ hours, the steer in 44½ hours, and the heifer in 47 hours. This, of course, goes with the statistics to prove that protcction is, at least, not absolute: but when speaking of the effect of the virus, it will be remembered that we said the dose has material influence, and we may not condemn wholesale this plan which is so largely adopted and so highly spoken of, for it is more than likely that in the naturally contracted digease, in the great majority of cases, such large quantities of virus do not gain the system at one time as those injected by us when applying the test.

Whilst carrying out the foregoing we inoculated a guinea-pig with some virus submitted to a temperature of 35 C., and when applying the test treated this animal in the some way. It survived, none the worse for the virulent inoculation. Thus encouraged, we subjected three guinea-pigs to injection of muscle juice dried at 32 C, and three to that dried at 39 C. Within 98 hours one of each set died, but the survivors resisted the introduction of considerable quantities of fresh potent virus. This but tends to prove that modified virus affords protection.

Another material for preventive inoculation has been very lately under the consideration of the profession, that prepared by what is termed "Kitt's" method—*i.e.*, subjection of virus to the action of steam, etc. By the kindness of Professor MacFadyean I got a suppiy of this material, which I used for "vaccinating" two calves of 18 months. My vaccinations were followed by no appreciable disturbances, local or general. They were under most careful supervision, the temperature taken twice daily for 14 days after the operations, that of neither animal reaching 103 F. After the lapse of a month I injected 50 drops of affected muscle juice deep into the connective tissue of each of these beasts, and another control heifer of the same age. The result in all three was simply trifling swelling at the seat of inoculation, and in a few days all was apparently well. This experiment unfortunately proves nothing as to protective power of Kitt's "vaccine," but adds further testimony to facts which must have been observed by every one intimately acquainted with the workings of the casual factor, concerning the erratic nature of the disease. I many cases I have been astonished with the resistance offered to large quantities of muscle juice introduced into the intra-muscular or subcutaneous tissues, and from careful examination I am disposed to

think that the differences in result depend not altogether on the difference in numbers of bacilli in the muscle juice. Recent records of experience with Kitt's "vaccine" show that there is some danger in its application, and some doubt as to its power to protect.

The foregoing is a cursory and a very incomplete glance at some of the more or less generally known or accredited preventives by inoculation. A paper of this kind would not afford proper matter for discussion if other so-called preventives were not touched on. In Great Britain the most common prophylactic treatment applied to Black Quarter is that of "setoning," and though adopted by and relied on by many practitioners who have very large experience, I do not think all are convinced of its beneficial action. That, like other means we have spoken of, it is not absolutely effectual there is no shadow of doubt. We have seen in one season, on 11 different farms, 11 young animals dead from "Quarter Ill," with the setons *in situ* at the time of death, beside at different times very many others which had been setoned. It is not with veterinary surgeons only, but with stock owners that this method finds a large amount of favour. In our own minds we are bound to say there is a strong suspicion that to the erratic nature of the disease much of the credit is due. It is common when asking those who favour the operation for views as to how setons produce protection, to get the candid confession that it cannot be explained, but that the fact remains, for in their experience many cases have been met with where though animals had died of Quarter Ill in certain pastures year by year till setoning has been carried out, when losses immediately cease. This is truly a common occurrence, and appears to favour the effect of the operation, but against it we have the experience that without setoning or any other appreciable treatment this freedom is often enjoyed. and it is quite natural that if the animals were setoned that the immunity should be attributed to their effect. We were struck by some remarks by Mr. Butcher, of Cleobury, in a recent number of *The Journal of Comparative Pathology*, &c. This writer instanced a case when absence of the disease had followed the giving of cake. The owner of course credits the cake with the power of prevention of Quarter Ill, and will use it, and if he should discontinue the use, and lose another animal, he will attribute his loss to absence of cake, and promptly, and with more faith than ever, resume the successful measure. It is not only setoning which may gain support in this way, protective inoculation may come in for its share. Some years since, I intravenously inoculated a herd of young cattle on a farm where great loss had been sustained for some years. I inquired of the owner some little time since as to the existence of the disease on his farm, and as he had not another case with pastured stock, I was not surprised to hear from him that he attributed his good fortune to my inoculation, though I did not ask how he thought stock unborn at the time my inoculation of his herd had been protected. It is enough for him that he had no case of Black Quarter.

While making the above remarks, it is far from us to assert that setons have no protective influence, but it is certainly a subject that demands settlement by experimental investigation, and a standing disgrace to our profession that this has not already been carried out. If the operation should be indisputably proved to be followed by no protective influence, it should be denounced by us as useless and cruel, and prohibited by law. The action of the Midland Counties V. M. Association in this respect is worthy of all emulation by kindred Institutions, and, I can scarcely forbear to remark here, that if our Societies, National and Provincial, were to engage more on actual work, there would be thus afforded useful material for effectual talk and "raison d'être." Of the effect of setoning guinea pigs, we are satisfied that they are as suscepitible to fatal Black Quarter some time after as before, though our experiments went to prove that if small quantities of virulent matter were injected into the guinea pig a day or so after the seton had been inserted, the animals did not contract fatal Black quarter. Further experiments on calves are necessary, and, I am pleased to say, contemplated by the Committee of the Midland Counties Association.

Equally good results are attributed to the administration of Hyposulphite of Soda, and if later observers had verified the statements of Polli, of Milan, there would seem great reason for placing confidence in this treatment, but in other hands this drug has not shown the same results. Outside the body Hyposulphite of Soda exercises little or no bactericidal action on the microbe of Quarter Ill, but from this it might not necessarily follow that after gaining the system it is not preventive, though the marvellous effects accorded to it are facts beyond our own experience of drugs. Our experiments on guinea pigs prove its inability to prevent or modify the disease in them. Its administration in practice has the great advantage of being harmless.

With the fullest intention of being brief and concise, we fear we may have laid ourselves open to a charge of discursiveness; but with so much experimental matter pointing to, but not exactly arriving at, a practical outcome, it is difficult to follow our best inclination. So with this apology, and with the hope that shortly further experiment will provide what is desired, we will conclude these remarks by summarising those points which we think bear most directly on this part of the subject.

It has been proved that protection can be artificially produced.

That insertion into the blood-stream of fresh virus is an effectual but practically dangerous means.

That naturally there is something in the blood which restrains the action of the virus.

That the leucocytes have a defensive and digestive function on the morbific agent, and that whatever increases this power lessens the chance of fatality following the entrance of the microbe. That during the conflict between the leucocytes and the virus a something is formed which protects for a longer or shorter time. That in other diseases a chemical product has been obtained from the organisms which, injected into the system, renders the animals immune from each disease.

That in cases, naturally or artificially induced, where a local lesion is observable, and where recovery takes place, an abscess (a collection of leucocytes) is usually formed. That, as a rule, inflammatory action, at the outset especially, increases the number of vigorous defending leucocytes. That three guinea pigs in which inflammation had been established, did not become affected after small quantities of virus were injected in a sound part.

That dried virus submitted to comparatively high temperatures has been very largely used on the Continent, and that statistics on a large scale support the view that it is harmless, and protective against the spontaneous contraction of the malady, and is consequently worthy of further consideration.

That the beneficial action of setons has not been experimentally proved, and that, considering the discomfort caused to animals by the operation, it is incumbent on bodies having funds at their disposal to endeavour to settle the matter.

That the erratic nature of the disease demands the greatest caution in making deductions from experiments for application to practice, and that experiments should be on a large scale, and repeated and performed on animals of the class we wish to protect, and not on animals of other species.

That, inasmuch as putrefaction has not a markedly deleterious effect on the microbes, we should dispose of the carcases of affected animals with great care.

ARMY VETERINARY DEPARTMENT.

ROYAL WARRANT.

ALTERATION OF RANKS OF OFFICERS OF THE VETERINARY DEPARTMENT.

VICTORIA R.

WHEREAS WE have deemed it expedient to alter in some respects the designations of the departmental ranks of Our Veterinary Department;

OUR WILL AND PLEASURE IS that the following amendments shall be made in Our Warrant of the April 6th, 1891:—

The following shall be inserted after Article 267A:—

267B. The substantive ranks of the Officers of Our Veterinary Department shall be as follows. These ranks shall carry precedence and other advantages attaching to the rank indicated by the military portion of the title, but shall not (except as provided in Article 269) entitle the Officer to military command, or to the Presidency of Courts Martial, Courts of Enquiry, Committees, or Boards of Survey.

VETERINARY-COLONEL.
VETERINARY-LIEUTENANT-COLONEL.
VETERINARY-MAJOR.
VETERINARY-CAPTAIN.
VETERINARY-LIEUTENANT.

The Director-General of the Veterinary Department shall hold the substantive rank of VETERINARY-COLONEL.

The term "Director-General" shall be substituted for "Principal Veterinary Surgeon."

The term "Veterinary Officer" shall be substituted for "Veterinary Surgeon."

EXTRACTS AND NOTES.

ABNORMALITIES OF MILK.

From the *Veterinary* column of *The North British Agriculturist* we take this extract which commences by a straightforward acknowledgement too seldom met with.

The following information is obtained chiefly from Drs. Freiderberger and Fröhner's German work on the *Pathology and Therapeutics of the Domestic Animals*:—

The natural proportion of the ordinary constituents of milk is sometimes altered. It may contain an *excess of water*, with relatively less fat and casein; its specific gravity is hence increased, and it has a blue colour. This defect is sometimes hereditary. It usually results from poor, watery food, from the cow being anæmic, as when she has tuberculosis. In countries where cows are worked, the milk is thin and aqueous. The treatment will obviously depend upon the cause. Concentrated nutritive food, with the requisite proportion of fats and albuminoids, will generally be needful; and if the appetite is faulty, stomachics are prescribed.

The fatty matters are sometimes in *excess*. This occurs normally in Jerseys, Kerrys, and some other breeds which are not heavy milkers, and also in young animals which are often popularly said to be better butter than cheese cows; sometimes during the period of œstrum, and not infrequently in ewes richly fed. When the fat is thus in excess it may purge and otherwise disorder the digestion of young animals using it. A reduction of the albuminoids in the food and suitable exercise usually rectify this irregularity.

Curdled milk is common both in cows and goats. It is usually dependant upon disorders of digestion, disease of the udder, hyperæmia, overwork, œstrum, or the animals being knocked about or much overheated. Humid, close, thundery weather favours its production. The night is usually worse than the morning milk. The curdling shows itself within a few hours after the milk is set up, and is always more notable when it has been boiled. When examined microscopically it is found to contain various micrococci, but whether these are the cause or the effect of the curdling has not been determined. Little cream rises, and the butter is made from it with difficulty. The cause of the condition must, if possible, be discovered and removed; any gastro-intestinal derangement must receive attention; the premises inhabited by the cattle, as well as those in which the milk is kept, must be healthful and clean. Curdling scarcely ever occurs when milk is refrigerated so soon as it comes from the cow. The addition of an alkaline bicarbonate, or of boric or salicylic acid, is advised. Antacids are recommended to be given to the cows.

Mucous or filamentous milk results from microbe invasion. Under the microscope are observed round and fringed varieties of coccus. These appear concurrently with the conversion of the sugar of milk into lactic and other acids. This condition occurs in summer, while the weather is hot and the air charged with electricity, but it is also induced from foul premises, and from the use of fermenting or bad food; while Danish authorities particularise a 'pinguicula' as occasionally producing this condition. When filamentous milk, even in small quantity, is mixed with sound milk, the mixture speedily spoils, becomes thick and viscous, coagulates incompletely, acquires a disagreeable taste, and yields a scant amount of cream, from which butter is made with difficulty. When kept a few days, it is apt to form a white, homogenous mass, in which round plaques of casein appear. The micro-organisms are destroyed by such disinfectants as sulphurous acid, or hyper-heated steam, and thorough cleanliness is enjoined. A temperature of 65 degs. centigrade is said to be fatal to these bacteria. Cattle yielding filamentous milk are prescribed antiseptics and hemp seed.

Blue milk is common, especially in spring and summer, at all seasons if the milk is kept in damp premises, while it is also occasionally yielded by animals that are out of health. The colouring results from the *Bacterium cyncyanum* or *Vibrio cyanogenus*, as it is sometimes termed. The micro-organism is found on the walls of infected dairies, and is distributed by the air and by flies.

Albuminoid milk coagulates imperfectly and slowly, and is apt to become blue. Blue specks appear on the cream, which readily passes into a putrescent state, the butter is marked with blue and green zones, and the curd is soft. The consumption of such milk is stated to be dangerous to calves and swine, and also to children. The condition is believed to be produced by sudden changes of diet, usually from dry to green food. It is apt to occur when cows are first turned to pasture, and especially if the herbage is wet and muddy. Its production is also favoured by any maladies which

retard the acidulation of the milk. The treatment consists in change of regimen, in removing the cows to dry, rather bare grazings, or, if they are housed, ensuring fresh air and cleanliness, and disinfection of the premises with sulphurous acid. Haubner states prevention is effected by adding a little acid to the milk. Further, the udder is ordered to be washed with an antiseptic solution, to destroy any germs lodged upon it.

Red milk is rare. Like the blue, it results from a coloured micro-organism, which, under cultivation, changes to blue and yellow. The yellow colouration occurs in boiled rather than in raw milk.

Milk, although sound and good when yielded, has a great capacity for absorbing volatile and other bodies, and hence is liable to become a vehicle for the transmission of the pathogenic organisms of such specific fevers as measles, scarlet and typhoid fevers, as well as tubercle. The milk of tuberculous cows is poor in fat and casein. That of pleuro-pneumonia patients has usually a disagreeable odour, is thick, readily spoils, and has sometimes caused vomiting in man. In contagious aphtha the milk has a sickly odour and taste, coagulates incompletely, is viscous, resembles colostrum, but is poor in sugar, as well as in casein, and sometimes yields ammonium carbonate. In cattle plague, before the secretion ceases, it is notably deficient in sugar and fat.

ON THOROUGHNESS.

A valuable and timely address, says *The Standard*, was delivered by Dr. William Duncan to the students of the Middlesex Hospital. Dr. Duncan took for his theme "Thoroughness," and it is a subject of which the importance to medical students, and to all of us, can hardly be overrated. The lecturer pointed out that accuracy, care, and nice observation are at the root of the qualifications which go to make a successful surgeon or physician. Without them genius itself is useless, and a vast mass of ill-digested information is not merely of no value to its possessor, but is, in fact, a dangerous burden to him. It is the fashion nowadays to boast of the greater fulness and variety of the studies which the young medical man is required to undertake before he is permitted to exercise his skill (or want of it) on the bodies of his patients. It is true that we have altered things considerably since the days of Mr. Bob Sawyer and Mr. Ben Allen. The modern young man who means to develope into a "doctor" has not much time for rowdy amusements. He is punctually and severely examined along the whole course of his training, and is required, not only to inspect a great many "subjects," and to witness frequent operations, but to read a large number of "stiff" books. He ought to start life with a very much better equipment than his predecessors, and no doubt he does so, if medical efficiency can be tested by the power of answering questions and "doing" papers. The general level of character and intelligence is steadily rising; but it is well to be reminded by Dr. Duncan that width of knowledge is not always quite the same thing as depth. The man of science, like the man of letters, may know many things without knowing much; and in the latter case his acquisitions, in so sternly practical a branch as medicine, are not of great avail. The English School, even in the days before examinations and German text-books, never lacked practitioners gifted with clearness, insight, and accurate skill of hand and eye, If they were somewhat deficient in the theoretical learning and scientific range of their Continental rivals, they atoned for the want by their earnest and almost religious thoroughness.

Is that useful and characteristic quality departing from us? There are good judges who say that it is, and there are not wanting some symptoms which appear to justify their fears, and to indicate that our insular thoroughness is in danger.

We live in an age of teaching; but that is not quite the same thing as an age of education. The diffusion of knowledge, as Hallam pointed out in a well-known passage of a once-popular book, need not imply its increase. Everybody learns a little of something nowadays: but it may be doubted whether so many people go below the surface of literary and scientific pursuits as was the case before the days of popular lectures. Boys and girls are induced to "take up" half-a-dozen subjects for an examination, and to drop them when they have just learnt enough to answer a paper in each. We are all expected to know a little about history, about philosophy, about political economy, about physics and physiology, and literature. But the assimilating power of the mental digestion is limited, and we are obliged to take our learning, as some people take their food, in a potted and compressed form. Instead of studying a science, we go to a course of lectures on it; and it remains to be seen whether our newer systems of popular education will be able to effect the same results as the harder and narrower, but more definite and precise, methods by which our fathers were trained.

"BARBED WIRE."

Mr. Edward G. Johnson, M.R.C.V.S., The Elms, Beighton, near Rotherham, writing to *The Sheffield Daily Telegraph* says, one hears a great deal about the praiseworthy work done by the officers of the Society for Prevention of Cruelty to Animals. I wonder when their attention will be given to a most grievous source of cruelty which one regrets to find is daily becoming more seriously common. I refer to the shocking injuries done to animals by "barbed wire." I am quite certain that the worthy society above referred to devotes much time, attention, and money to cases which are "trifling" compared with many which pass their notice where the grossest cruelty and suffering is caused by that modern scientific curse, "barbed wire." I do not intend to discuss its merits or usefulness. I will even admit its effectiveness as a fence. But is effectiveness everything? May not the remedy, even in the matter of fencing, be worse than the disease? It seems to me that in many cases where horses and cattle are concerned you might as effectively fence with a line of "maiming traps, "subterranean mines (explosive)," or any other damaging or death producing system—at least such is my experience!

Of course if stock-owners don't mind loss, and are satisfied to go upon the principle of treating their ani-

mals as enemies, for which they make fences to act as deadly ambushes which they certainly are where barbed wire is used in the fence or hidden on the far side. If owners don't mind this well, you will say, is it not useless discussing the matter? and as it increases the "patients" of veterinary surgeons, why need you trouble yourself? However that may be, sir, I believe you will grant that the subject of cruelty to animals is one which not only may but ought to be considered for the sufferers' (animals) sake, quite apart from all other considerations.

Ever since "barbed wire" was introduced into my neighbourhood I have had to deal with cases of serious injury frequently occurring amongst horses and cattle; such, doubtless, is the experience of many members of my profession. Recently I have had some really shocking cases, particulars of one I subjoin. An in-foal mare (with foal at foot) got into a fence the far side of which was wire "barbed" at every three inches. Feeling herself fast she struggled desperately—goaded by the spikes—only to get more entangled, until she literally dragged up the wire and the posts to which it was attached for a considerable distance. When found ten minutes later the poor brute was feafully mangled and torn all over—the breast being torn and jagged open so deep that the elbow joint was almost cut through, the muscles and large blood vessels, &c., being severed; indeed the near fore limb was nearly separated from the body. The poor animal was so shockingly mutilated, that it soon succumbed to shock and loss of blood.

The mare belonged to a poor man, to whom the loss is serious. The wire was put up by a neighbour, doubtless without any ill intention or even his expecting such disastrous results. Personally, I blame nobody! The cause is simply "barbed wire," and if we want to remove an effect we must remove the cause. Stock-owners who use it and have not had trouble yet will disagree with me; but we'll agree to differ. To such I say, "it will be someone else's turn next." So it is wisest not to shout.

THE FERTILITY OF MONORCHIDS

The following is a summary of a discussion at a meeting of the Ohio and Michigan Veterinary Associations:—

Dr. Torrence:—Many animals have one concealed testicle and one well developed. He well knew such to be reproductive.

Dr Wilson:—I have known stallions where only one testicle was showing to reproduce, but have never known such to happen where both were hidden;

Dr. Wright;—Have known cryptorchids to cover mares, but no colts resulted.

Dr. Duffy:—Had kept a horse two years where only one testicle was visible. He had produced many colts, in fact, as many as other horses.

Dr. Hillock;—Had known several cases of true cryptorchids to be used, and never knew one to be productive. I mean in the horse—but I have in bulls.

Dr. Torrence:—Had known rams with no external sign of testicle to produce.

Dr. Gribble;—Had known many cases of the kind and if no developed testicle, no foal resulted. Had known such bulls and boars to reproduce.

Dr. Duffy:—I once at a post-mortem found one well developed testicle in the abdominal cavity. It appeared as well developed as if in scrotum: could not understand why such could not reproduce, but this animal had never been known to.

Discussion closed, it being the sense of the meeting that horses with undeveloped testicles are not reproductive, but bulls, rams and boars often are.

American Veterinary Review.

The Production of Heat in Fever.

For many years a controversy has been carried on as to the cause of the rise of temperature in fever, one school arguing that such rise depended on increased oxidation, while the opposite school, of which Traube may be regarded as the exponent, considered the rise to be due to the retention of heat—that is, to a diminished discharge of heat by the body. With the view of settling this question, Professor Rosenthal (*Berlin. klin. Wochenschr.*, August 10th, 1891) has recently, with the aid of his air calorimeter, carried out a research on the lower animals, using especially rabbits, in which pyrexia was caused by the injection of phthisical sputum, infusion of hay, etc. The result showed that the discharge of heat from the body was diminished while the temperature was rising, Traube's view therefore being confirmed. The next point which Rosenthal set himself to investigate was whether during the onset of fever there was any increased production of heat, or whether the rise of temperature might be wholly due to diminished loss. The calorimetric experiments failed to supply any evidence of increased production of heat; in short, the rise of temperature appeared to be wholly due to diminished discharge of heat. Rosenthal is careful to limit the the above conclusion to the animals under experiment (that is, rabbits), in which pyrexia was produced in the manner indicated, A broader generalisation must await further investigation. Nevertheless, a number of observations have already been made on sick persons in a state of fever, and the evidence obtained, although not yet complete, points in a similar direction, as stated above.

Brit. Med. Journal.

Brilliant Essay on "Breath."

The following is an essay on "Breath," by a schoolboy who had attended a course of lectures in physiology, and appears in the *Journal of Education*:—

"Breath is made of air. We breathe with our lungs, our lights, our livers, and our kidneys. If it wasn't for our breath we should die when we slept. Our breath keeps the life agoing through the nose when we are asleep. Boys that stay in a room all day should not breathe. They should wait till they get outdoors. Boys in a room make carbonicide. Carbonicide is more poisonous than mad dogs. A heap of soldiers was in a black-hole in India, and carbonicide got into that black-hole, and killed nearly every one afore morning. Girls kill the breath with corsets that squeeze the diagram. Girls can't run or holler like boys because their diagram is squeezed too much. If I was a girl, I rather be a boy so I can run and holler and have a good big diagram."

CORRESPONDENCE.

OUR TITLE.

SIR,

There are a great many duffers with and without diplomas who call themselves veterinary surgeons, and are variously styled—farriers, horse doctors, cow doctors, and veterinarys by their employers, but Mr. Kidd and Mr. Walker are at least ten years too late in standing up for "our title." Our title doesn't matter a little to those who employ us, tho' the Editor of *The Record* would have us all to be great scientists in the first flight with presidents of hygienic congresses—a very laudable ambition no doubt, and we cannot too much impress upon our sons the desirability of aiming high, whether or no we lay to ourselves the flattering unction that they will hit the mark, but, dear Mr. Editor, your writers speak of the profession as tho' we were all West-end practitioners, or principals of colleges, whereas we are nothing of the sort. The great bulk of us are poor men with no ambition beyond being able to support our families in decency, and conduct ourselves respectably in "that calling it has pleased God, etc., etc." Hardly any of our clients—or as we usually call them, customers—read anything higher than *Farm and Home*, and this they do because some one writes answers in it to questions on diseases of animals for nothing. With this paper, and Day's drinks and white oils, sulphur, nitre, and salts, most of them affect to know as much about doctoring as we do, and only employ us for night calving jobs and castrating at a figure so unremunerative that we have been unable to pay a guinea a year for the use of the College arms. Our clients do not care for the diploma a bit, but prefer "Old So-and-so" whom they've known as a practical man all their lives, or his son, whose father has "taught him all he knows." "How," say they, can cockneys at a college teach a man cattle doctoring? why that young swell that came here in his kid gloves could'nt spay a pig, and as for calving a cow, he kept his coat on and said do this and do that; why that was'nt what we sent for him for—we wanted her calved, and old So-and-so would ha' done it if he harnessed a team to the critter." This is the kind of thing we have to hear, and also we know it is true. Our Royal Veterinary College in its catch-em-alive-oh prospectus tells the guileless youth on getting his diploma that he is fit to practice!! Was ever a greater tarradiddle foisted on a confiding parent? who, if he knew the truth, would pay a practitioner to teach his duly qualified son the elements of his profession! The farming class cannot see and know and value the scientific knowledge the M.R.C.V.S. may have industriously absorbed, but he does see and know the value of the farrier who goes in and castrates a lot of calves or pigs, or takes away a calf in workmanlike fashion. These men who have earned their reputation as practitioners should not be deprived of a title they have rightly or wrongly used for two or three or more generations say Mr. Kidd and Mr. Walker, but is there the least likleihood of a Judge or of Parliament granting such a thing? The old school of practical farriers, with the not inconsiderable number of men who have had more or less teaching at our Colleges outnumber the members by about two to one, and it says very much for the spirit of progress that any Parliament should have passed such an Act as that of 1881. That the old ones should retain the title that the public gave them was no doubt intended, but that young men should not shirk a proper training was equally right.

Do we not all of us know good men and true who have no diploma? Can we not even look up to them in cases of difficulty, where their ounce of practice is worth our pound of theory?

Messrs. Kidd and Walker ignore the fact that a great many members' fathers, uncles, and cousins are so-called "unqualified men" and they are only raising the devil in seeking at this late hour of the day, to annoy many honourable and deserving men, (backed up by plenty of members) in order to snub some of the incompetent ones—or possibly, too competent rivals.

Yours, etc.,

HEREDITARY VET.

DEAR MR. EDITOR,

If your correspondent "Looker-on" had signed his name to his letter it might have been unnecessary for me to have replied to it, I repeat that Registered existing Practitioners have NO RIGHT to the title of Veterinary Surgeon, they have never claimed that right. They began to use it through some M.R.C.V.S., inviting them to do so, and if they had received encouragement from the same members they might also have been members of the Council and Examining Boards ere now.

Yours, etc.,

5th October, 1891. H. KIDD.

CHANGE OF PRACTICE—1845 & 1891.

SIR,

You have done me the honour of reproducing in *The Record* a case of mine reported so far back as 1845.

The history, if it does nothing more, will at least give some idea of the method of treatment in those days, when bleeding was called the sheet anchor in dealing with most diseases.

To quote from the report—"Blood was abstracted from the jugular vein to the amount of six quarts, so as to allay the inflammatory fever set up." These were my pupilage days, when I was rarely without a fleam, a pincushion, a pledget of tow, and a bloodstick in my pocket, for they were all in nearly daily use.

Spring and fall, bleeding and a dose of physic were the supposed to be necessary preparations for the production of "condition."

All cases of colic which failed to succumb to a first anti-spasmodic draught were bled; every case of lymphangitis was bled; all foot lamenesses which did not yield to poultices and a carthartic underwent a loss of blood from the toe; and the brachial vein was occasionally opened in shoulder lameness.

I remember having under my care at that time the case of a roadster mare from which I took 15 quarts of blood within the 24 hours, and to my surprise NOW the animal lived! For this imaginary proof of professional skill, I received "honourable mention," and was spoken of as "a clever young fellow who was sure to get on."

A writer about the date named—I forget who just now—said, "When you bleed, BLEED!" I think in the case referred to I carried out these instructions!

Such was the general treatment of our patients during my four years apprenticeship which ended in 1847. *Nous avons changé tout cela.* I have not bled, or caused to be bled, any horse or other animal for many years, and I doubt not this is the experience of most who have been in practice so long a time. Disease is much more successfully combatted now than it was in 1845.—I am, yours faithfully,

B. CARTLEDGE.

COMMUNICATIONS, BOOKS, AND PAPERS RECEIVED:—Messrs. B. Cartledge, H. Kidd, H. Beach, "Journal of Comparative Pathology."